



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/804,328	03/12/2001	James M. Chen	4488	1020

7590
Chief Patent Counsel
Engelhard Corporation
101 Wood Avenue
P.O. Box 770
Iselin, NJ 08830-0770

07/22/2003

EXAMINER

JOHNSON, EDWARD M

ART UNIT	PAPER NUMBER
----------	--------------

1754

DATE MAILED: 07/22/2003

9

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n No.

09/804,328

Applicant(s)

CHEN ET AL.

Examiner

Edward M. Johnson

Art Unit

1754

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 17 and 22-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 and 18-21 is/are rejected.
- 7) ☒ Claim(s) 5 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2,3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of claims 1-16 and 18-21 in Paper No. 6 is acknowledged. The traversal is on the ground(s) that the two groups may be distinct but are not independent with regard to the common elements recited above. This is not found persuasive because contrary to Applicant's apparent suggestion, two groups that have some common elements are still capable of being distinct. In the instant case, the claimed process and catalyst are independently claimed, which by itself shows independence. The Examiner's specific showing of independence was made in the restriction requirement. The Examiner outlined that the process could be practiced with a materially different product and also that the product could be used in a materially different process, the specifics of which Applicant appears not to have responded to.

The requirement is still deemed proper and is therefore made FINAL.

Claim Objections

2. Claim 5 is objected to because of the following informalities: "N2O" appears to be a typographical error. Examiner suggests --N₂O--. Appropriate correction is required.

Claim Rejections - 35 USC § 112

Art Unit: 1754

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 16 and 18-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 16, "the catalyst selective for the reduction of nitrous oxide" lacks antecedent basis.

Claim 18, lines 3-5, "the sequence of flow", "the gaseous stream", and "the catalyst" all lack antecedent basis or are unclear as to what is being referred to. In the second instance, the Examiner suggests replacing "the gaseous stream" with --the gas stream--.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-4, 8, 10-16, 18-19, and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Riley et al. US 5,200,162.

Regarding claims 1 and 18, Riley '162 discloses a process for nitrous oxide decomposition comprising contacting a nitrous oxide and NOx stream with ammonia and zeolite (see column 4, lines 34-38 and column 8, lines 48-51).

Regarding claims 2-4, Riley '162 discloses 250-650 degrees Celsius (see Example 10).

Regarding claim 8, Riley '162 discloses Y zeolites (see column 5, lines 5-9).

Regarding claims 10-11, Riley '162 discloses iron-exchanged zeolites (see column 5, lines 10-13).

Regarding claims 12-14, Riley '162 discloses up to 30% or significantly lower (see claim 3, and column 1, lines 19-26).

Regarding claims 15-16, 19, and 21, Riley '162 discloses precious metals for both nitrous oxide and NOx (see column 4, lines 65-68 and column 8, lines 50-51).

7. Claims 1-8, 10-16, 18-19, and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Kato et al. US 4,571,329.

Regarding claims 1 and 18, Kato '329 discloses a process for ammonia reduction of nitrous oxide comprising contacting nitrous oxide containing gas with ammonia (abstract) and zeolite (see column 3, lines 43-48).

Regarding claims 2-4, Kato '329 discloses 300-500 degrees Celsius (see column 7, line 30).

Regarding claims 5-7 and 12-14, Kato '329 discloses 1000 ppm of N₂O and ammonia (see column 7, lines 22-25).

Regarding claim 8, Kato '329 discloses zeolite Y (see column 7, lines 8-0).

Regarding claims 10-11, Kato '329 discloses Fe exchanged zeolite (see column 4, lines 23-25).

Regarding claims 15-16, Kato '329 discloses removal of NO_x and N₂O (abstract).

Regarding claims 19 and 21, Kato '329 discloses a first NO_x reduction zone and a second N₂O reduction zone (see column 5, lines 26-40).

8. Claims 1-3, 8, 10-11, 15, and 18-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Tsuchitani et al. US 5,756,057.

Regarding claims 1 and 18, Tsuchitani '057 discloses a method for removal of NO_x comprising contacting a stream containing N₂O (see column 4, lines 33-36) with reducing agent such as ammonia (see column 4, lines 41-43 and 48-50) and a catalyst comprising a zeolite (see column 5, lines 7-11, Example 21, and Table 1).

Regarding claims 2-3, Tsuchitani '057 discloses a temperature of 400 degrees (see column 20, lines 46-59 and 65-66).

Art Unit: 1754

Regarding claim 8, Tsuchitani '057 discloses ZSM-5 zeolite (see Example 21).

Regarding claims 10-11, Tsuchitani '057 discloses exchanging with an ionic copper amine complex (see Example 21).

Regarding claims 15 and 19-20, Tsuchitani '057 discloses a method for removal of NO_x comprising contacting a stream containing N₂O followed by adsorption of NO₂ (see column 4, lines 33-41).

9. Claims 1-4, 8-16, and 18-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Fetzer et al. WO 97/10042 (translated in US 6,056,928).

Regarding claim 1, Fetzer '928 discloses a method of removing nitrogen oxides from a gas flow comprising contacting the flow with a zeolite and ammonia (see column 4, lines 14-21 and 37-41).

Regarding claims 2-4, Fetzer discloses 450-500 and 150-500 degrees Celsius (see column 3, lines 31-34 and column 4, lines 61-62).

Regarding claims 8-11, Fetzer '928 discloses copper exchanged beta zeolite (see column 4, lines 14-21).

Regarding claims 12-14, Fetzer '928 discloses 1-13% N₂O (see column 3, lines 40-45).

Regarding claims 15-16 and 19, Fetzer '928 discloses Fe, Rh, Ru, and Pd catalysts for both NO_x and N₂O reduction (see column 4, lines 10-13, 20-21, and 51-54).

Regarding claims 20-21, Fetzer '928 discloses adsorption of NO_x other than nitrous oxide in Stage A (column 2, lines 43-47), adsorption of N₂O in Stage B (see column 3, lines 20-21), followed by adsorption of NO_x other than N₂O in Stage C (see column 4, lines 27-36).

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Staniulis et al. US 4,867,954 discloses catalytic reduction of nitrogen oxides including nitrous oxide using zeolite catalysts (see abstract and Examples).

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edward M. Johnson whose telephone number is 703-305-0216. The examiner can normally be reached on M-F 6:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley S. Silverman can be reached on 703-308-3837. The fax phone numbers for the organization where this application or proceeding is assigned


Art Unit: 1754

are 703-872-9310 for regular communications and 703-872-9311 for
After Final communications.

Any inquiry of a general nature or relating to the status
of this application or proceeding should be directed to the
receptionist whose telephone number is 703-308-0661.

EMJ

July 17, 2003


STANLEY S. SILVERMAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700